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☐ 1. Document ID: WO 9624198 A1

L3: Entry 1 of 2 File: EPAB Aug 8, 1996

PUB-NO: WO009624198A1
DOCUMENT-IDENTIFIER: WO 9624198 A1
TITLE: SPECTRUM SPREADING COMMUNICATION DEVICE AND COMMUNICATION SYSTEM

PUBN-DATE: August 8, 1996

INVENTOR-INFORMATION:

NAME	COUNTRY
SHIBA, TAKASHI	JP
YUHARA, AKITSUNA	JP
YAMADA, YOSHIHIRO	JP
OTA, YASUHIRO	JP

ASSIGNEE-INFORMATION:

NAME	COUNTRY
HITACHI LTD	JP
SHIBA TAKASHI	JP
YUHARA AKITSUNA	JP
YAMADA YOSHIHIRO	JP
OTA YASUHIRO	JP

APPL-NO: JP09500129
APPL-DATE: February 1, 1995

PRIORITY-DATA: JP09500129W (February 1, 1995)

INT-CL (IPC): H04 B 1/69
EUR-CL (EPC): H04B001/707; H04J013/00

ABSTRACT:

CHG DATE=19990617 STATUS=O>A structure of a novel spectrum spreading communication device which solves the problem with the conventional spectrum spreading

communication using Barker codes, etc., and limits the rise of the side-lobe of a correlational signal independently of the order of information codes by use of a code sequence having a code length of at least 14. The spectrum spreading communication device uses a pseudo-noise code having a code length of at least 14 and a self-correlation side-lobe of not greater than 3 as a pseudo-noise code of a direct spreading communication device which uses the pseudo-noise codes whose polarities are inverted so as to deal with also digital information. Thus, even when the pseudo-noise code length is 14 or more, the side-lobe of the correlation coefficient can be restricted. Accordingly, the error rate of the spectrum spreading communication device is reduced and the processing gain is improved.

☐ 2. Document ID: WO 9624198 A1 , US 6134264 A, JP 08523396 X

L3: Entry 2 of 2 File: DWPI Aug 8, 1996

DERWENT-ACC-NO: 1996-371703
DERWENT-WEEK: 200054

TITLE: Spread spectrum communication system - uses pseudo-noise code having length greater than 14, pref. odd number, and auto-correlation side lobe below 3,

INVENTOR: OTA, Y; SHIBA, T ; YAMADA, Y ; YUHARA, A ; OHTA, Y

PATENT-ASSIGNEE:

ASSIGNEE	CODE
HITACHI LTD	HITA

PRIORITY-DATA: 1995WO-JP00129 (February 1, 1995)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
WO 9624198 A1	August 8, 1996	J	079	H04B001/69
US 6134264 A	October 17, 2000		000	H04K001/00
JP 08523396 X	February 24, 1998		000	H04B001/69

DESIGNATED-STATES: CN JP KR US AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

CITED-DOCUMENTS:2.Jnl.Ref; JP 03174835?

APPLICATION-DATA:

PUB-NO	APPL-DATE	APPL-NO	DESCRIPTOR
WO 9624198A1	February 1, 1995	1995WO-JP00129	
US 6134264A	February 1, 1995	1995WO-JP00129	
US 6134264A	July 21, 1997	1997US-0875182	
US 6134264A		WO 9624198	Based on
JP 08523396X	February 1, 1995	1995WO-JP00129	
JP 08523396X	February 1, 1995	1996JP-0523396	
JP 08523396X		WO 9624198	Based on

INT-CL (IPC): H04 B 1/69; H04 K 1/00

ABSTRACTED-PUB-NO: US 6134264A
BASIC-ABSTRACT:

The system uses a code sequence of pseudo noise with inverted polarities and having a code length of more than 14, and an autocorrelation side-lobe of less than 3 for direct spreading communication. The pseudo noise code is pref. an odd number, e.g. 15, 21, 25 or 27. A filter function is used to reduce the side lobes of the output matching signal obtained after demodulation.

A matched filter is used as a demodulating element. Each tap of the matched filter is weighted. The filter may be a surface acoustic wave filter without polarity inverting electrodes.

ADVANTAGE - Solves problem with conventional spread spectrum communication using Barker codes, etc., and limits rise of side-lobe of correlational signal independently of order of information code error rate. Processing gain is improved.

ABSTRACTED-PUB-NO:

WO 9624198A
EQUIVALENT-ABSTRACTS:

The system uses a code sequence of pseudo noise with inverted polarities and having a code length of more than 14, and an autocorrelation side-lobe of less than 3 for direct spreading communication. The pseudo noise code is pref. an odd number, e.g. 15, 21, 25 or 27. A filter function is used to reduce the side lobes of the output matching signal obtained after demodulation.

A matched filter is used as a demodulating element. Each tap of the matched filter is weighted. The filter may be a surface acoustic wave filter without polarity inverting electrodes.

ADVANTAGE - Solves problem with conventional spread spectrum communication using Barker codes, etc., and limits rise of side-lobe of correlational signal independently of order of information code error rate. Processing gain is improved.

CHOSEN-DRAWING: Dwg.1/22

TITLE-TERMS: SPREAD SPECTRUM COMMUNICATE SYSTEM PSEUDO NOISE CODE LENGTH GREATER PREFER ODD NUMBER AUTO CORRELATE SIDE LOBE BELOW

DERWENT-CLASS: W02

EPI-CODES: W02-C03; W02-G02; W02-K05B1; W02-K05B3; W02-K05B5;

SECONDARY-ACC-NO:
Non-CPI Secondary Accession Numbers: N1996-312663

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DIALOG(R)File 345:Inpadoc/Fam.& Legal Stat

13168035
Basic Patent (No,Kind,Date): WO 9624198 A1 19960808 <No. of Patents: 002>
Patent Family:

Patent No	Kind	Date	Applic No	Kind	Date	
US 6134264	A	20001017	US 875182	A	19970721	
WO 9624198	A1	19960808	WO 95JP129	A	19950201	(BASIC)

Priority Data (No,Kind,Date):
WO 95JP129 A 19950201

PATENT FAMILY:
UNITED STATES OF AMERICA (US)
Patent (No,Kind,Date): US 6134264 A 20001017
SPREAD SPECTRUM COMMUNICATION DEVICE AND COMMUNICATION SYSTEM (English)
Patent Assignee: HITACHI LTD (JP)
Author (Inventor): SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA YOSHIHIRO (JP); OHTA YASUHIRO (JP)
Priority (No,Kind,Date): WO 95JP129 A 19950201
Applic (No,Kind,Date): US 875182 A 19970721
National Class: * 375150000; 375151000; 375152000; 375153000
IPC: * H04K-001/00
Derwent WPI Acc No: * G 96-371703
Language of Document: English

UNITED STATES OF AMERICA (US)
Legal Status (No,Type,Date,Code,Text):

US 97875182	A	19970721	US REFW	CORRESPONDS TO PCT APPLICATION (ENTSPRICHT PCT ANMELDUNG) WO 9624198 P
US 6134264	P	19950201	US AA	PRIORITY (PATENT) WO 95JP129 A 19950201
US 6134264	P	19970721	US AE	APPLICATION DATA (PATENT) (APPL. DATA (PATENT)) US 875182 A 19970721
US 6134264	P	20001017	US A	PATENT

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)
Patent (No,Kind,Date): WO 9624198 A1 19960808
SPECTRUM SPREADING COMMUNICATION DEVICE AND COMMUNICATION SYSTEM (English)
Patent Assignee: HITACHI LTD (JP); SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA YOSHIHIRO (JP); OTA YASUHIRO (JP)
Author (Inventor): SHIBA TAKASHI (JP); YUHARA AKITSUNA (JP); YAMADA YOSHIHIRO (JP); OTA YASUHIRO (JP)
Priority (No,Kind,Date): WO 95JP129 A 19950201
Applic (No,Kind,Date): WO 95JP129 A 19950201
Designated States: (National) CN; JP; KR; US (Regional) AT; BE; CH; DE; DK; ES; FR; GB; GR; IE; IT; LU; MC; NL; PT; SE
Filing Details: WO 100000 With international search report
IPC: * H04B-001/69
Derwent WPI Acc No: * G 96-371703; G 96-371703
Language of Document: Japanese

WORLD INTELLECTUAL PROPERTY ORGANIZATION, PCT (WO)
Legal Status (No,Type,Date,Code,Text):

WO 9624198	P	19950201	WO AE	APPLICATION DATA (APPL. DATA)

Search

WO 95JP129 A 19950201

WO 9624198 P 19960808 WO AK DESIGNATED STATES CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT (DESIGNATED STATES CITED IN A PUBLISHED APPL. WITH SEARCH REPORT)
CN JP KR US

WO 9624198 P 19960808 WO AL DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPLICATION WITH SEARCH REPORT (DESIGNATED COUNTRIES FOR REGIONAL PATENTS CITED IN A PUBLISHED APPL. WITH SEARCH REPORT)
AT BE CH DE DK ES FR GB GR IE IT LU MC NL PT SE

WO 9624198 P 19960808 WO A1 PUBLICATION OF THE INTERNATIONAL APPLICATION WITH THE INTERNATIONAL SEARCH REPORT (PUB. OF THE INTERNATIONAL APPL. WITH THE INTERNATIONAL SEARCH REPORT)

WO 9624198 P 19960906 WO DFPE REQUEST FOR PRELIMINARY EXAMINATION FILED PRIOR TO EXPIRATION OF 19TH MONTH FROM PRIORITY DATE

WO 9624198 P 19961030 WO 121 EP: PCT APP. ART. 158 (1) (EP: PCT ANM. ART. 158 (1))

WO 9624198 P 19970721 WO ENP ENTRY INTO THE NATIONAL PHASE IN:
US 875182 A 19970721

WO 9624198 P 19980318 WO 122 EP: PCT APP. NOT ENT. EUROP. PHASE (EP: PCT ANM. NICHT IN EUROP. PHASE EING.)

WO 9624198 P 19980708 WO 122 EP: PCT APP. NOT ENT. EUROP. PHASE (EP: PCT ANM. NICHT IN EUROP. PHASE EING.)